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A REVIEW ON DISASTER RESCUE SYSTEM

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Abstract— *Recent ubiquitous disasters like flood, earthquake and other natural calamities have been leading to mass destruction of the innocent lives across the world. Due to the wide-area earthquake disaster, unavailable power and communication infrastructure, limited man-power and resource, traditional rescue operations and equipment are inefficient and time-consuming, leading to the golden hours missed. With the increasing proliferation of powerful wireless devices, like smart phones, they can be assumed to be abundantly available among the disaster victims and can act as valuable resource to coordinate disaster rescue operations. In this paper, we propose an android based disaster rescue system, to assist the operations of disaster rescue and relief. The basic idea of this project is to help and rescue the needy by viewing their current location in Google map. There is an authentication for admin and user in this android application. Admin adds the details of camps, collection centers by adding camp name, in-charge of camp and contact number. Supplies needed in camp can be viewed by admin just by clicking on the camp location in map. The user can just open the application and ask for help just by clicking “I need help” tab and after this the supplies needed, name of the user and contact number are added by the user. Once the user adds these details, this requirement is sent to admin with user’s location. Admin views it and does the needful and updates the status as responders dispatched or marks the request as resolved once the need of the user is fulfilled. This proposed approach can significantly reduce the delay in providing supplies and helps the user to view the camps and collection centers just by installing this app.*

Keywords: *Disaster, Rescue, GPS, Remote data, Camp location, Deployment.*

I. INTRODUCTION

We are now facing increasing threats from natural and man-made disasters. In order to effectively plan and implement disaster rescue operations, first responders have to obtain as much detailed information as possible about foods and other basic needs, paying special attention to special groups such as children, the elderly, and the disabled. It is also expected that disaster and evacuation information should be transmitted to the affected population in a timely and accurate manner, which can have an enormous effect in saving lives and reducing damage. While the

importance of customized and intelligent services for assisting the population in emergencies has always been recognized, challenges surrounding the design, deployment, management and integration of such a system have prevented its emergence and/or wide applications. In the last three years, we have been working on the construction of a service-oriented system for providing emergency support to both responders and the stricken population in disaster rescue operations. The project, named disaster rescue system, is developed mainly to provide and the needy people with food and basic needs by providing rescue camps by showing the nearby camps in maps using GPS. On the one hand, the portability and ease of information storage and dissemination has enabled mobile devices to become one of the most viable means of communication with the population, and recent trends in mobile computing have motivated interest in accessing web services from mobile devices in order to extend their functionality and gain access to remote data.

II. STUDY ABOUT THE SYSTEM

EXISTING SYSTEM

Many natural disasters are happening in various locations in our human life. Because the continuous changes in geographic position climate and countries situated near oceans are most sensitive warnings and evacuation guidelines may saves lives of many people. If any disasters occurred the people can face main problem to find safest place on that location. In existing system, the government or NGOs create the camp for people to stay and provide the needed supplies. But the people are not aware of these camps because there is electric power to view about these camps in television. Due to this lag, many might lose their life or fall sick due to insufficient things that are needed to live a basic life. To overcome this we have developed an android application to notify the people regarding camps and collection centers.

Disadvantages

- i. No proper and required number of camps.
- ii. People are unaware the camps and their location.
- iii. Delay occurs due to less number of camps.
- iv. Time consumes to provide the supplements by the volunteers.

PROPOSED SYSTEM

Disaster rescue system is developed as an android application to help the users at the time of disaster occurrence. This application helps the user to just open the application and ask for helps just by mentioning their name, contact number and the supplies needed. Once the detail added by the user, the location of users is viewed by admin and takes the required step to provide the supplies.

And before this process, admin is the one who adds the details of camp and collection centers which is viewed by the users to get help. The camp and collection centers are viewed in map and can view if there is any in camp center and collection center by the admin.

Once the user is provided with the needed supplies, admin updates the status as teams have responded to the request or marks request as resolved.

Advantages

- i. Camp details and collection center details are added by admin and the user can just view with location in this application.
- ii. User need not register and login to access this app, user needs to just open and ask for help.
- iii. Delay in providing the required supplements to user is rectified.

III. METHODOLOGY

The Modules Are:

a) *Admin*

Admin is the main module in this application where he/she is the responsible for adding the camp details and collection center details. Admin views the help requested by the users and updates the status. Admin is the authorized person who needs to login with username and password to access the application.

b) Camp and collection center details

This module holds the details about the camp and collection centers which were added by admin by mentioning the camp name, in-charge of camp and the mobile number of the in-charger.

c) User's request

User's in need for help can just open this application and ask for help just by mentioning his/her name, mobile number and the needed supplements. These details added by the user are viewed by admin.

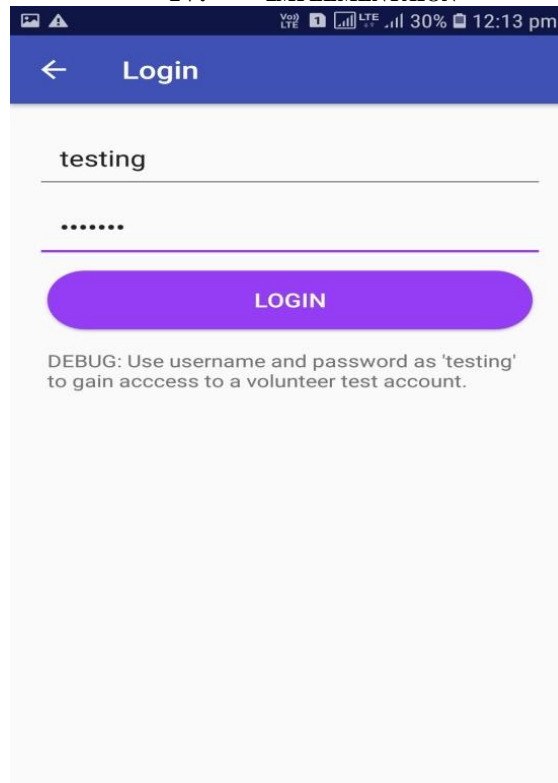
d) GPS location

Every details added by admin regarding the camps and collection centers are shown in Google map with GPS location to make it easy for the user to view the camp details without any trouble. And similarly, the user's location is also viewed by admin who asks for help. Just by clicking the location of camps, collection centers and users help requests, admin can view the needed supplies.

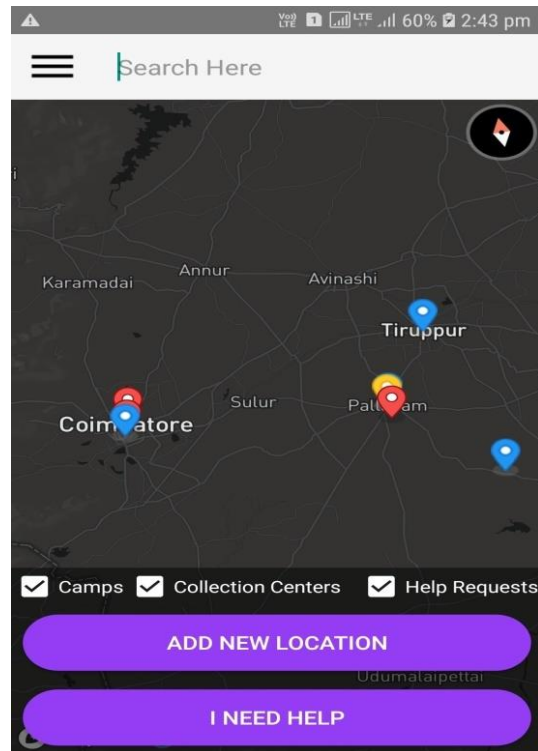
e) Rescue module

In this module, admin view the requirement of users with their location. If the users need is fulfilled admin updates the status to responders dispatched or marks the request as resolved. By this, the users are provided with their needs immediately without any delay and every user is provided with the needed facility.

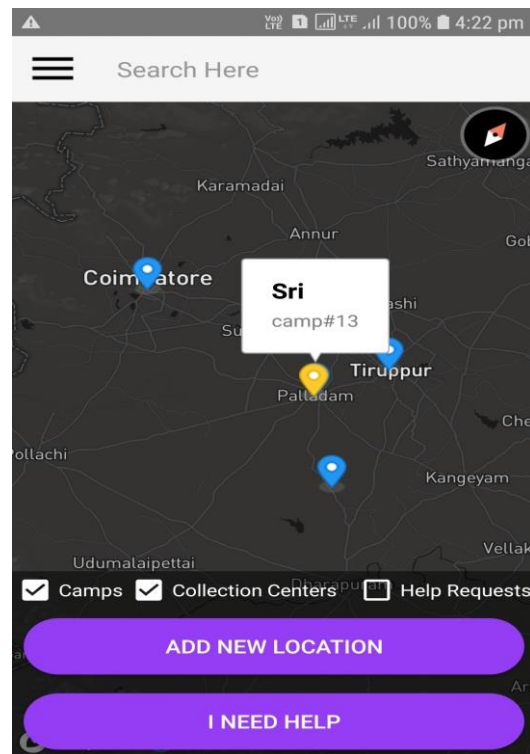
IV. IMPLEMENTAION



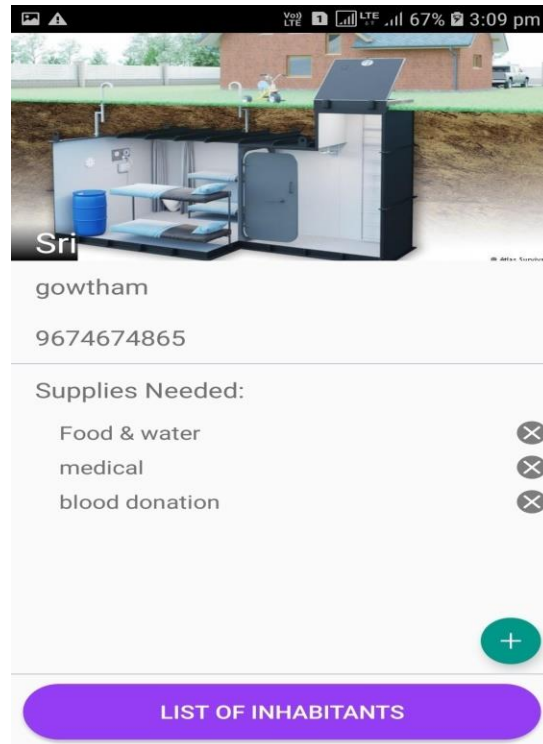
FORM 1: login page



FORM 2: home page

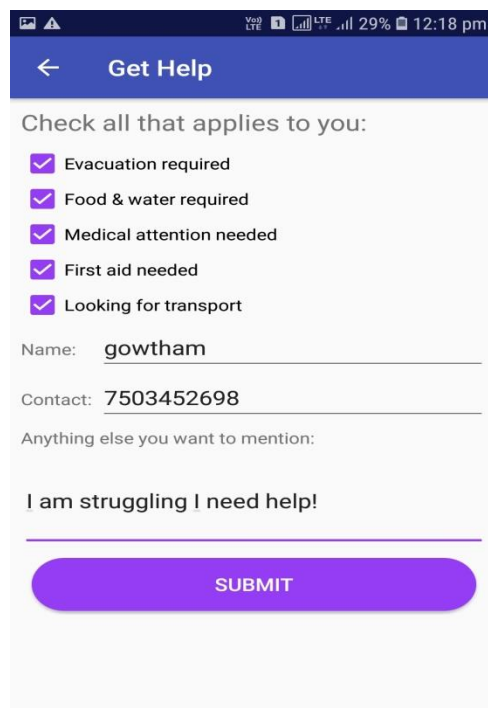


FORM 3: view camp & collection center locations



The screenshot shows a mobile application interface. At the top, there is a status bar with icons for signal, LTE, 67% battery, and 3:09 pm. Below the status bar is a header image showing a campsite with a tent and a person. The main content area has a white background. It starts with the name 'Sri' in a small box, followed by 'gowtham' and the phone number '9674674865'. Below this is a section titled 'Supplies Needed:' with three items: 'Food & water', 'medical', and 'blood donation'. Each item has a small 'X' icon to its right. At the bottom right of this section is a green circular button with a white plus sign. Below the entire form is a large purple button with the text 'LIST OF INHABITANTS'.

FORM 4: camp & collection center in-charge details



The screenshot shows a mobile application interface for a 'Get Help' form. At the top, there is a status bar with icons for signal, LTE, 29% battery, and 12:18 pm. Below the status bar is a blue header with a back arrow and the text 'Get Help'. The main content area has a white background. It starts with the text 'Check all that applies to you:' followed by five checkboxes, all of which are checked: 'Evacuation required', 'Food & water required', 'Medical attention needed', 'First aid needed', and 'Looking for transport'. Below the checkboxes are three text input fields: 'Name: gowtham', 'Contact: 7503452698', and 'Anything else you want to mention:'. The text 'I am struggling I need help!' is entered into the third field. At the bottom of the form is a large purple button with the text 'SUBMIT'.

FORM 5: users request to help

← Get Help

Name: gowtham

Contact: 9568747212

Evacuation required
Food & water required
Medical attention needed
First aid needed
Looking for transport

I am struggling I need help.

RESPONDERS DISPATCHED

MARK REQUEST AS RESOLVED

FORM 6: helpers from dispatched

← Get Help

Name: gowtham

Contact: 7503452698

Evacuation required
Food & water required
Medical attention needed
First aid needed
Looking for transport

I am struggling I need help!

Teams have responded to the request.

MARK REQUEST AS RESOLVED

FORM 7: teams have respond the request

V. CONCLUSION

Our disaster management system is an android mobile phone application employing Google Map (GM), Our application provides evacuation help on the map of the application to user if the device user is in probable disaster affected area considering the user's current location. This helps people to go to the safe area or shelter place prior to the disaster. Our application also facilitates the work of authority to track his evacuation progress.

VI. Scope for Future Enhancements

Moreover, we have a future plan to implement another application to assist in rescue and relief operation after the disaster and a better server side application to totally automate the system of detecting disaster prone area.

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